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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/785,112	02/24/2004	Christoph Beuerle	1-25097	9114

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MACMILLAN SOBANSKI & TODD, LLC  
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TOLEDO, OH 43604-1619

EXAMINER
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WILLIAMS, THOMAS J

ART UNIT	PAPER NUMBER
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3683

DATE MAILED: 06/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.



## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "32" has been used to designate both the motor winding and the general area of the step down gear, see figure 1. The motor winding gear reference agrees with the specification. Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Objections***

2. Claim 17 is objected to because of the following informalities: line 5, the phrase "break" should be replaced with --brake--. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Art Unit: 3683

4. Claims 1, 2, 7-10, 12-15, 17 and 18 are rejected under 35 U.S.C. 102(e) as being anticipated by US 2003/0050147 A1 to Backes et al.

Re-claim 1, Backes et al. discloses a disc brake, comprising: two brake shoes 4 & 5, a brake disc 6; a conversion device (interpreted as elements 16-18) is connected to a motor and converts a driving motion into an actuating motion; a support device 19 takes up a reaction force; and two or more force sensors 43 measure the reaction force, the sensors are disposed at different positions between the conversion device and the support device. Backes et al. discloses a plurality of sensors arranged on member 29, see paragraph 24 lines 1-4. It is noted by the examiner that Backes et al. specifically recites in the plural form "*measuring elements 43, e.g., wire strain gauges*".

Re-claim 2, wire strain gauges will have a planer form.

Re-claim 7, the support device 19 is coupled rigidly to a housing of the disc brake. The support device defines part of the housing.

Re-claim 8, the support device 19 comprises a step portion (best illustrated in figure 2, interpreted as area behind reference 47).

Re-claim 9, the electrical interface 46 of the sensor in Backes et al. is integrated onto the step of the support, see figure 2.

Re-claim 10, a carrier 29 is disposed between the conversion device and the support device and receives the sensor elements within grooves 45.

Re-claims 12-15, the conversion device converts rotary motion into linear motion, and comprises a nut/spindle unit, the support device 29 interacts with a component (spindle 17) of the conversion device, the support device 29 is supported against the step (see figure 2).

Art Unit: 3683

Re-claim 17, Backes et al. discloses a disc brake, comprising: two brake shoes 4 & 5, a brake disc 6; a conversion device (interpreted as elements 16-18) is connected to a motor and converts a driving motion into an actuating motion; a support device 19 takes up a reaction force; and two or more force sensors 43 measure the reaction force, the sensors are disposed at an annular distance from one another with respect to an axis of the brake disc.

Re-claim 18, Backes et al. discloses a disc brake, comprising: two brake shoes 4 & 5, a brake disc 6; a conversion device (interpreted as elements 16-18) is connected to a motor and converts a driving motion into an actuating motion; a support device 19 takes up a reaction force; and two or more force sensors 43 measure the reaction force, the sensors are disposed at different positions.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Art Unit: 3683

7. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Backes et al. in view of US 6,230,854 to Schwartz et al.

Re-claims 3 and 4, Backes et al. teaches that the sensors are wire strain gauges rather than piezoelectric. Schwartz et al. teaches the use of either wire strain gauges or piezoelectric sensors as force sensor, see claims 7 and 9. It would have been obvious to one of ordinary skill in the art to have replaced the wire strain gauge in Backes et al. with a piezoelectric sensor as taught by Schwartz et al., thus increasing sensitivity for obtaining more accurate force readings. Each type of sensor is commonly known in the art.

#### *Allowable Subject Matter*

8. Claims 5, 6 and 11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### *Conclusion*

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Fargier et al. discloses a disc brake having a sensor positioned between a support and a conversion device. Schenk et al. and Maron et al. (column 8 lines 38-44) disclose a disc brake having at least two separate sensors for detecting brake force.

10. Any inquiries concerning this communication or earlier communications from the examiner should be directed to Thomas Williams whose telephone number is (703) 305-1346. The examiner can normally be reached on Monday-Thursday from 6:30 AM to 4:00 PM. The examiner can also be reached on alternate Fridays.

Art Unit: 3683

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Lavinder, can be reached at (703) 308-3421. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1113.

TJW

June 24, 2004

THOMAS WILLIAMS  
PATENT EXAMINER

Thomas Williams

AU 3683

6-24-04